Defining Residual Radial Translation of Distal Radius Fractures: A Potential Cause of Distal Radioulnar Joint Instability

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ERRATUM

The publisher regrets an error in the abstract of the above article in the *Journal of Wrist Surgery*, Volume 3, Number 1, 2013, page 22 (DOI: 10.1055/s-0033-1357758). The "Background" paragraph of the abstract was printed incorrectly. The correct abstract appears below.

Background Instability of the distal radioulnar joint (DRUJ) is a complication that can occur following distal radius fracture or malunion. We have observed that residual radial translation of the distal radius, relative to the radial shaft, may be a causal factor of DRUJ instability, even once the traditional radiographic parameters (volar tilt, radial inclination, and ulnar variance) have been restored. Residual radial translation of the distal fragment may cause detensioning of the distal interosseous membrane (IOM) and pronator quadratus with poor apposition between the ulnar head and sigmoid notch. This may potentially lead to persistent instability of the ulnar head following internal fixation. Residual radial translation deformity is at risk of being overlooked by the wrist surgeon as there is no existing radiographic parameter that accurately measures this deformity.

Patients and Methods In this study, 100 normal wrist radiographs were reviewed by three fellowship-trained orthopedic surgeons to develop a simple and reproducible technique to measure radial translation.

Results Utilizing the method described, the point of intersection between the ulnar cortex of the shaft of the radius and the lunate left a mean average of 45.48% (range 25–73.68%) of the lunate remaining on the radial side. In the majority of cases more of the lunate resided ulnar to this line. High levels of agreement with inter-rater (intraclass coefficients = 0.967) and intra-rater (intraclass coefficients = 0.79) reliability was observed.

Conclusions The results of this study can be used to define a normal standard against which residual radial translation can be measured to assess the reduction of distal radius fractures. This new parameter aids in the development of surgical techniques to correct residual radial translation deformity. In addition, awareness and correction of this potential

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malreduction at the time of surgery may decrease the need for other procedures on the ulnar side of the wrist to improve DRUJ stability, such as ulnar styloid fixation, TFCC repair, or ligamentous grafting.

Level of Evidence Level II (Diagnostic)